



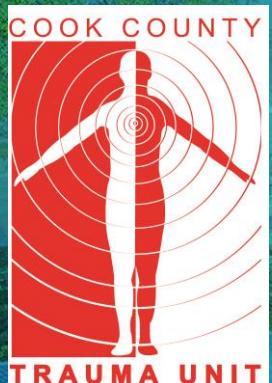
# Dept of Trauma/Burn Surgery/PM&R

## 2018 Year in Review



### Dr. Faran Bokhari, Chairperson

March 22, 2019



COOK COUNTY  
**HEALTH**

# Divisions and Sections

## Department Chairperson

Trauma Surgery Admin

Pre-Hospital and Resuscitation

Burn Surgery

Surgical Critical Care Units (Trauma and Burn)

Research

Quality

Prevention

Rehabilitation

## Dr. Faran Bokhari

Dr. Frederic Starr

Dr. Andrew Dennis

Dr. Stathis Poulakidas

Dr. Thomas Messer

Dr. Leah Tatebe

Dr. Caroline Butler

Rev. Carol Reese

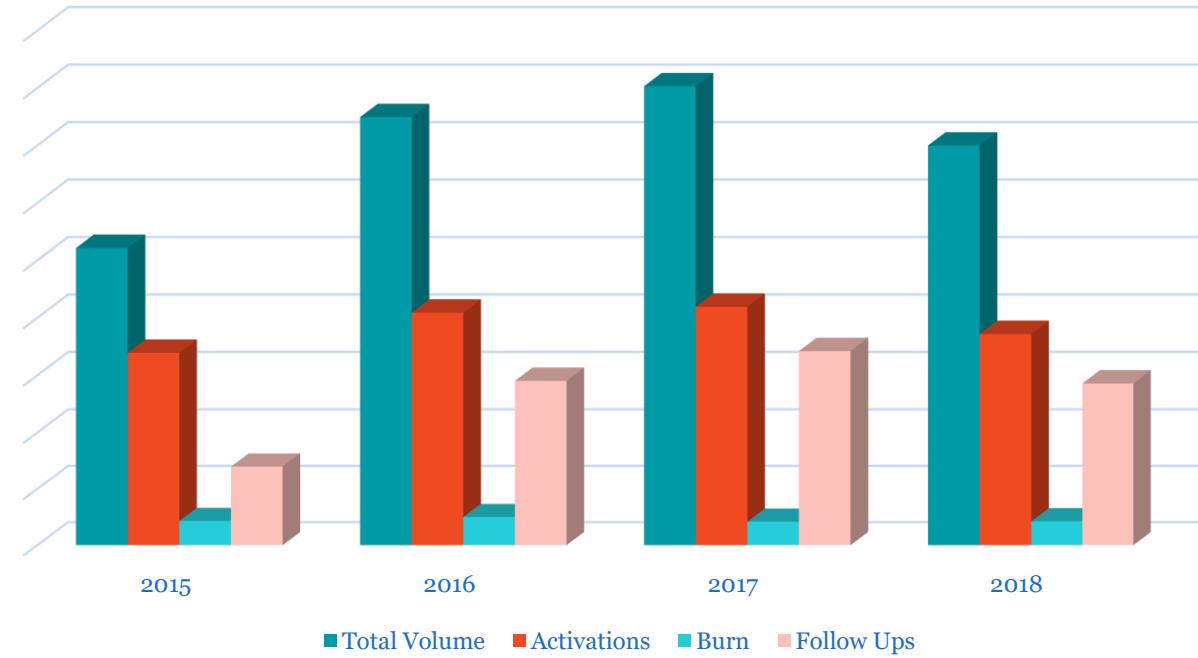
Dr. Tess McCarthy



# Initiatives 2018

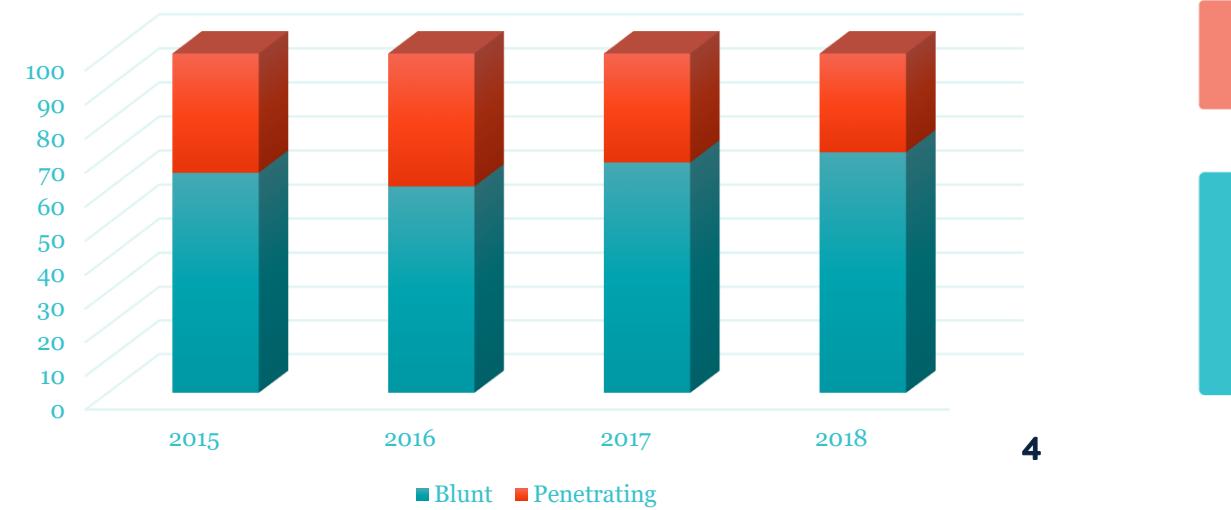
- Quality and benchmarking
- IDPH level 1 verification-achieved 2017-2021
- American Burn Association verification-achieved 2017-2020
- American College of Surgeons level 1 verification-target 2019-2020-in process
- Research-expansion and alignment with QA
- Hiring completed

# Trauma Services: Volume & Method of Injury



There were 60% more trauma activations in 2015 compared to 2014

## Mechanism of Injury



# Parameters Tracked

<input type="checkbox"/> Acute Kidney Injury	<input type="checkbox"/> Osteomyelitis
<input type="checkbox"/> Acute Respiratory Distress Syndrome (ARDS)	<input type="checkbox"/> Unplanned Return to the OR
<input type="checkbox"/> Cardiac Arrest with CPR	<input type="checkbox"/> Unplanned Admission to the ICU
<input type="checkbox"/> Decubitus Ulcer	<input type="checkbox"/> Severe Sepsis
<input type="checkbox"/> Deep Surgical Site Infection	<input type="checkbox"/> Other
<input type="checkbox"/> Drug or Alcohol Withdrawal Syndrome	<input type="checkbox"/> Abdominal Compartment Syndrome (Retired 2011)
<input type="checkbox"/> Deep Vein Thrombosis (DVT)	<input type="checkbox"/> Abdominal Fascia Left Open (Retired 2011)
<input type="checkbox"/> Extremity Compartment Syndrome	<input type="checkbox"/> Base Deficit (Retired 2011)
<input type="checkbox"/> Graft/prosthesis/flare failure (Retired 2016)	<input type="checkbox"/> Bleeding (Retired 2011)
<input type="checkbox"/> Myocardial Infarction	<input type="checkbox"/> Coagulopathy (Retired 2011)
<input type="checkbox"/> Organ / Space Surgical Site Infection	<input type="checkbox"/> Coma (Retired 2011)
<input type="checkbox"/> Pneumonia (Retired 2016)	<input type="checkbox"/> Intracranial Pressure (Retired 2011)
<input type="checkbox"/> Pulmonary Embolism	<input type="checkbox"/> Systemic Sepsis (Retired 2011)
<input type="checkbox"/> Stroke / CVA	<input type="checkbox"/> Wound Disruption (Retired 2011)
<input type="checkbox"/> Superficial Surgical Site Infection	<input type="checkbox"/> Catheter Associated Urinary Tract Infection (CAUTI)
<input type="checkbox"/> Unplanned Intubation	<input type="checkbox"/> Central Line Associated Bloodstream Infection (CLABSI)
<input type="checkbox"/> Urinary Tract Infection (Retired 2016)	<input type="checkbox"/> Ventilator Associated Pneumonia (VAP)
<input type="checkbox"/> Catheter-Related Blood Stream Infection (Retired 2016)	

<input type="checkbox"/> Absence of Hourly Vitals
<input type="checkbox"/> SDH/EDH with Craniotomy > 4 hrs after Arrival
<input type="checkbox"/> Comatose Patient Left ED before Definitive Airway Established
<input type="checkbox"/> Reintubation within 48 hrs of Extubation
<input type="checkbox"/> Abdominal Injuries and Hypotension without a Laparotomy within 1 hr of Arrival
<input type="checkbox"/> Laparotomy > 4 hrs after Arrival
<input type="checkbox"/> Nonfixation of Femoral Diaphyseal Fracture
<input type="checkbox"/> GSW to Abdomen Managed Non-operatively
<input type="checkbox"/> Initiation of Debridement of Open Tibial Fx > 8 hrs after Arrival
<input type="checkbox"/> Abdominal, Thoracic, Vascular, or Cranial Surgery > 24 hrs after Arrival
<input type="checkbox"/> HIV Positive

Year	2018
<b>Total</b>	<b>100</b>
<b>Trauma Act.</b>	<b>53%</b>
Cat. 1	1/3
Cat. 2	2/3
Blunt	70%
Penetrating	30%
Other	11%
DOA	1%
DIE	1%
Death in House	1%
<b>Encounters</b>	<b>47%</b>
Txr In	<b>27%</b>
Txr Out	<b>0.1%</b>
T & R	<b>45%</b>
Admitted	<b>55%</b>

# Trauma Metrics

## Non SVC Admits

3 – Inapprop 22 – OK 1% of admits

## Transfer Out

1-IR 2-ECCMO 4-Family Request

## Under/Over Triage

3 – Over 2 – Under

## Time To CT

(for Head Injury with GCS<13 or significant mechanism)

Avg:58 mins (n:187)

## NFS Compliance

Classification – 84%

Activation Time – 75%

Pre-hospital Activation – 81%

Patient Arrival – 98%

Trauma Present – 93%

## Time to OR

(for emergent trauma cases)

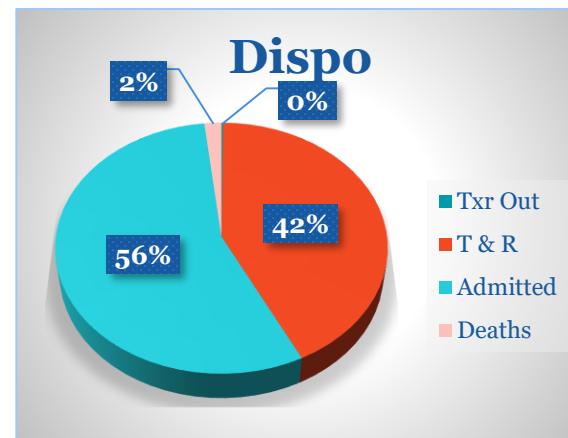
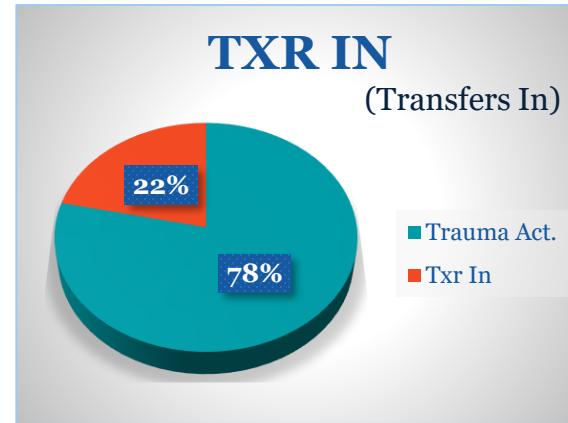
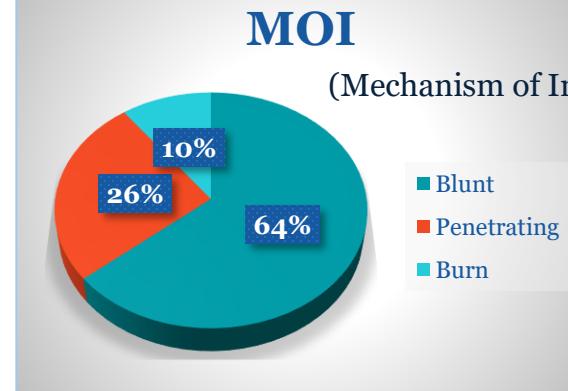
71 mins (n:145)

## Emergent Airways

94-airways 8-crichs (7%), 2-anesthesia, 1 –esophageal

## Open Fracture to ABX

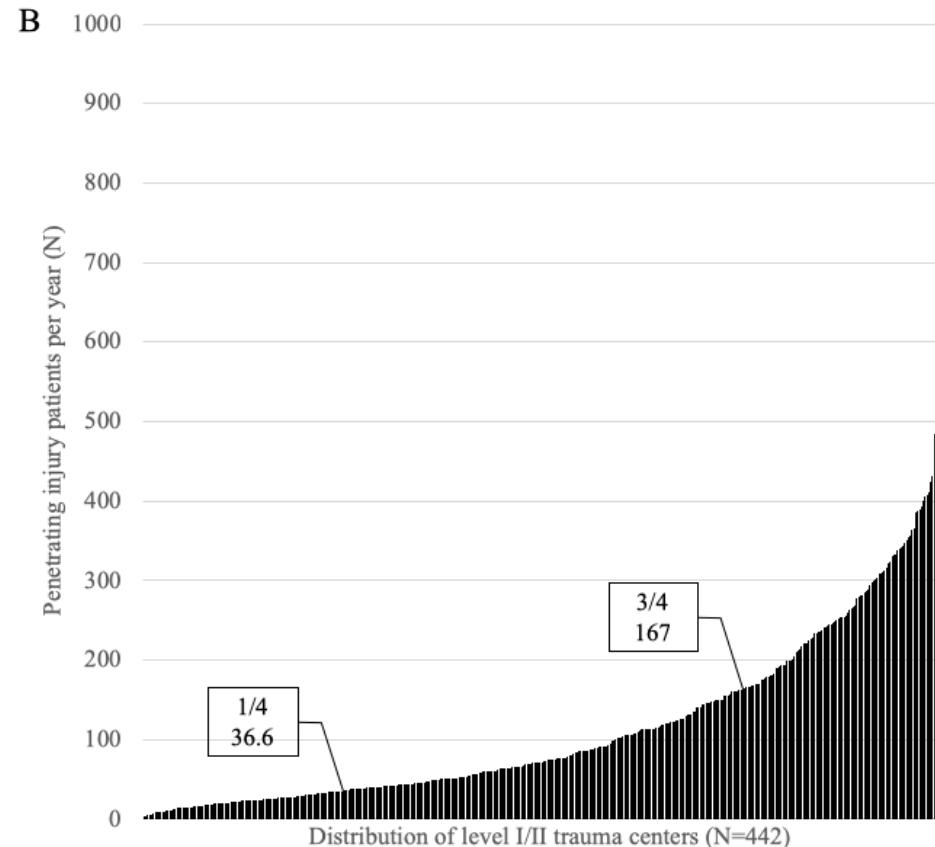
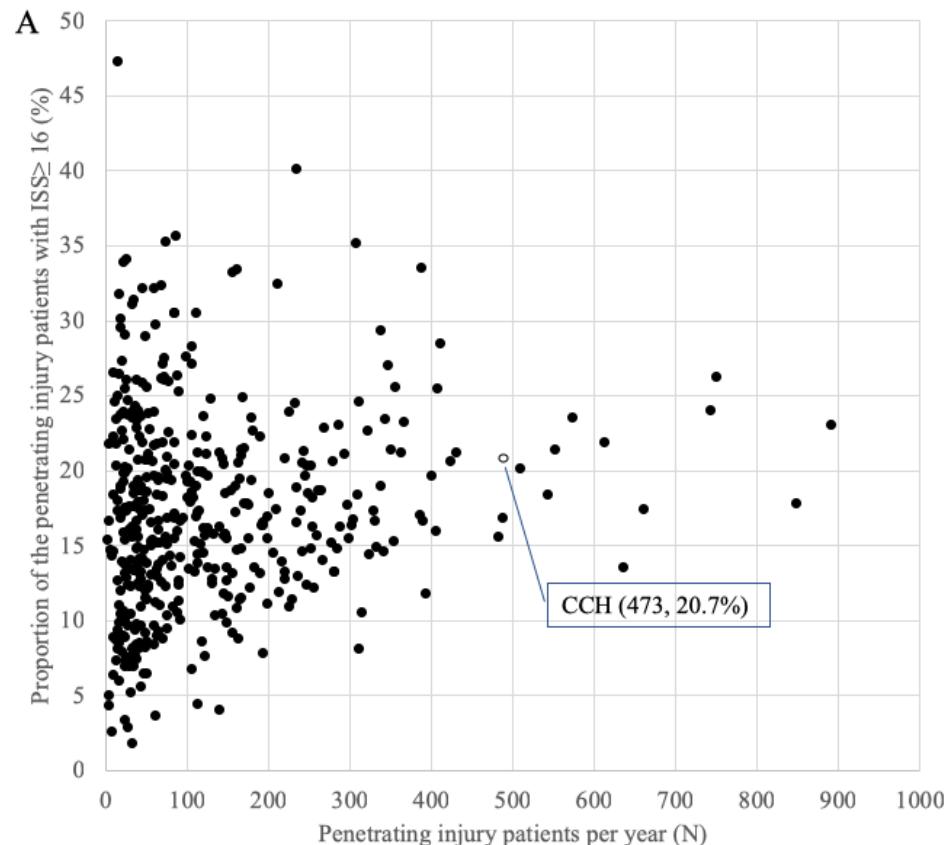
49 Average 34 Median



# Journal of Trauma and Acute Care Surgery

## Right Hospital, Right Patients: Penetrating Injury Patients Centralized to High-Volume Penetrating Trauma Centers Have Lower Mortality

Accepted March 2019 Journal Of Trauma



**Journal of Trauma and Acute Care Surgery**  
**Right Hospital, Right Patients: Penetrating Injury Patients Centralized to High-Volume**  
**Penetrating Trauma Centers Have Lower Mortality**

- CCH compared to 448 national trauma centers
- Significantly more severely injured patients than National Trauma Databank
- Survival top 7.7% for severely injured patients

# Journal of Trauma and Acute Care Surgery

## Right Hospital, Right Patients: Penetrating Injury Patients Centralized to High-Volume Penetrating Trauma Centers Have Lower Mortality

Table 1. Comparisons between NTDB (level I/II trauma centers) and CCH

	NTDB (N=587,183/year)	CCH (N=1,597/year)	p-value <sup>#</sup>
General demographics			
Mechanism			<0.001
Penetrating (N, %)	55,696 (9.5%)	473 (29.6%)	
Non-penetrating (N, %)	531,487 (90.5%)	1,124 (70.4%)	
Overall mortality (N, %)	16476 (2.8%)	36 (2.3%)	<0.001
Penetrating injuries	(N=55,696)	(N=473)	
Mortality (N, %)	2,226 (4.0%)	17 (3.6%)	<0.001
Severe penetrating injuries (ISS≥16) (N, %)	10,187 (18.3%)	98 (20.7%)	<0.001
Mortality of severe penetrating injuries (N, %)	2,015 (19.8%)	7 (7.4%)	<0.001

# Chi-square test

# Burn Services

2018

- Same Metrics As Trauma
- Graft Failure Rate <1% (10% Threshold)
- F/U Rate Of Admitted Patients: 75% (Meets Threshold)
- Total Burns 2018: 1200; Wounds 300



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**HEALTH**

# Rehabilitation Services

**3 Locations:** Stroger/Oak Forest/Provident

**15% Increase** Over 2017- Numbers and Billings

**Total Evaluations:/Interventions:**

Inpatient 27k/ Outpatient 32k = 59k

8 Occupational Therapists

20 Physical Therapists

3 Speech Language Pathologists

**More Evaluations Per Therapist Than Industry Standard**

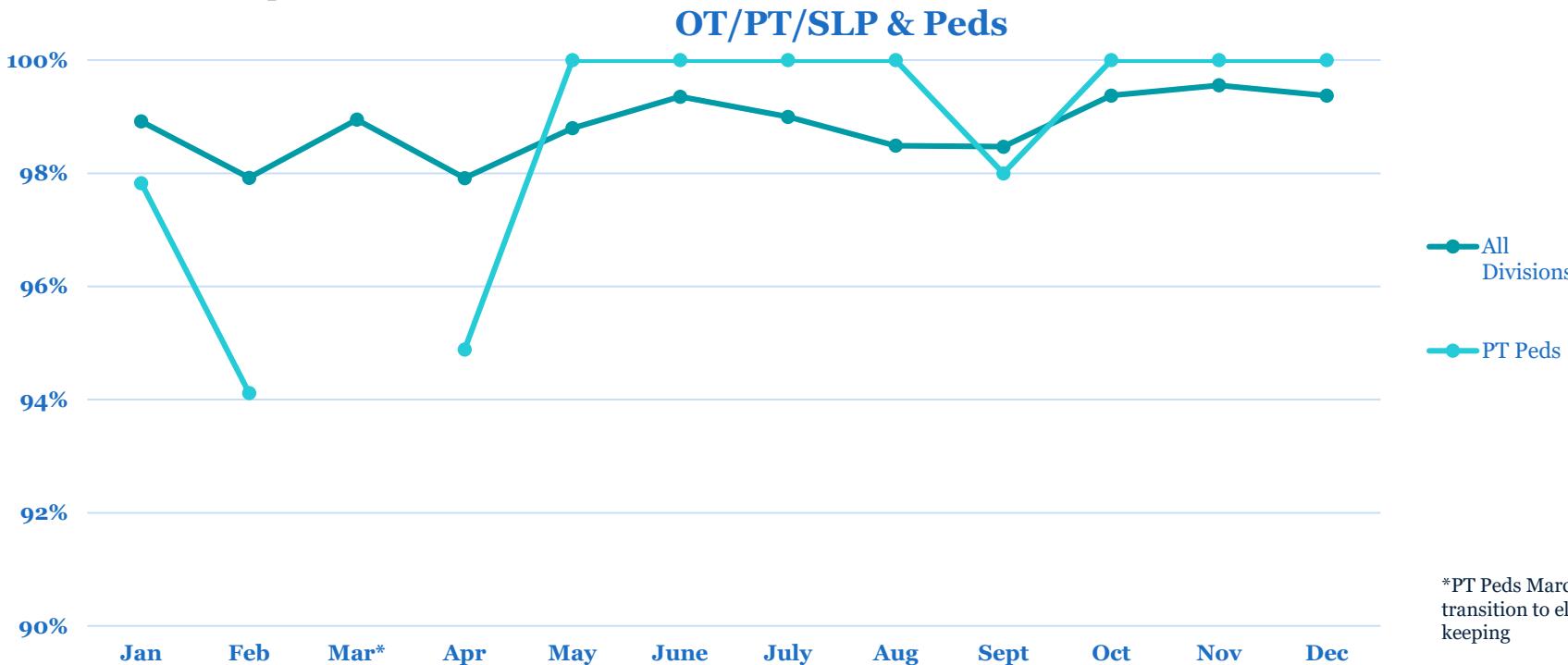


# Rehabilitation Services

## Quality Metrics

1. Timeliness of Inpatient Evaluations
2. Patient Satisfaction with Outpatient Services
3. Billing/G-Code Compliance
4. Pain Management Compliance

# Timeliness of Inpatient Evaluations



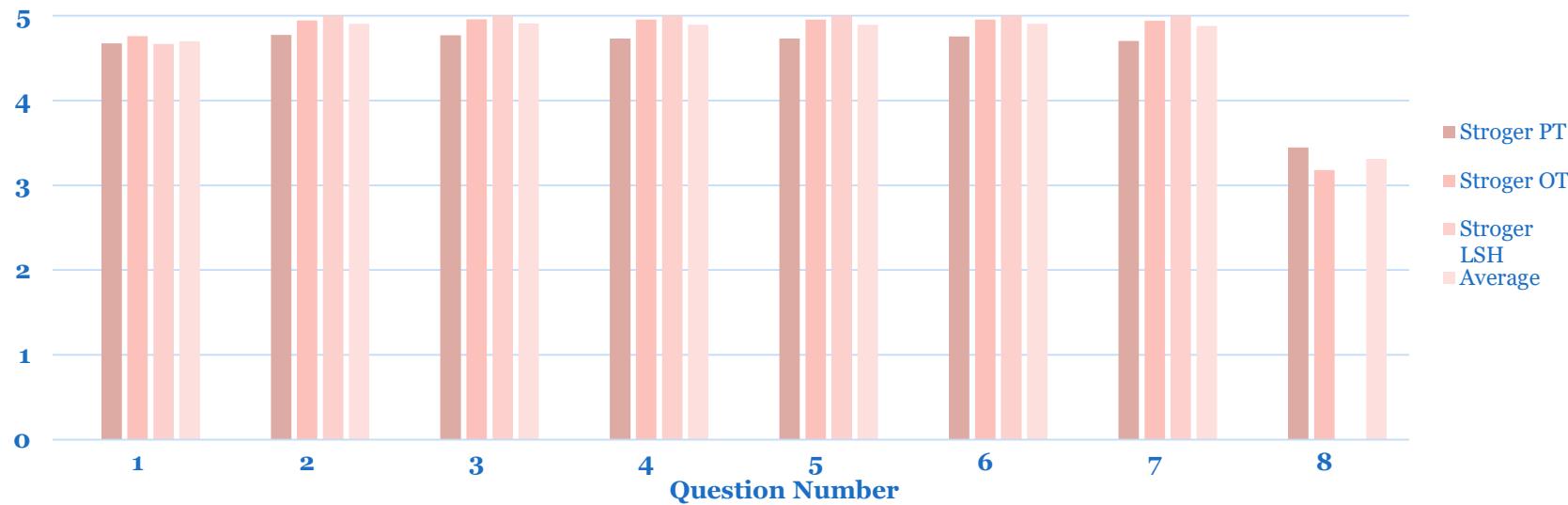
\*PT Peds March data lost during transition to electronic record keeping

Purpose	Items Measured	Analysis	Action
<ul style="list-style-type: none"><li>95% of all OT/PT/LSH inpatients seen within 24 hours of physician referral to provide timely and effective patient care.</li></ul>	<ul style="list-style-type: none"><li>Days of the week</li><li># of student interns</li><li># of total FTEs for each discipline</li><li>Est. treatment capacity per FTE</li><li># of evaluations waiting at start</li><li># of new evaluation orders received after day began</li><li># of IPs discharged before evaluation completed</li></ul>	<ul style="list-style-type: none"><li>Department has met 98% compliance this quarter (except for PT Pediatrics in Feb, Mar &amp; Apr).</li></ul>	<ul style="list-style-type: none"><li>Implemented training and assignment of additional pediatric staff</li></ul>



# Outpatient Satisfaction Survey Results – OT/PT/LSH

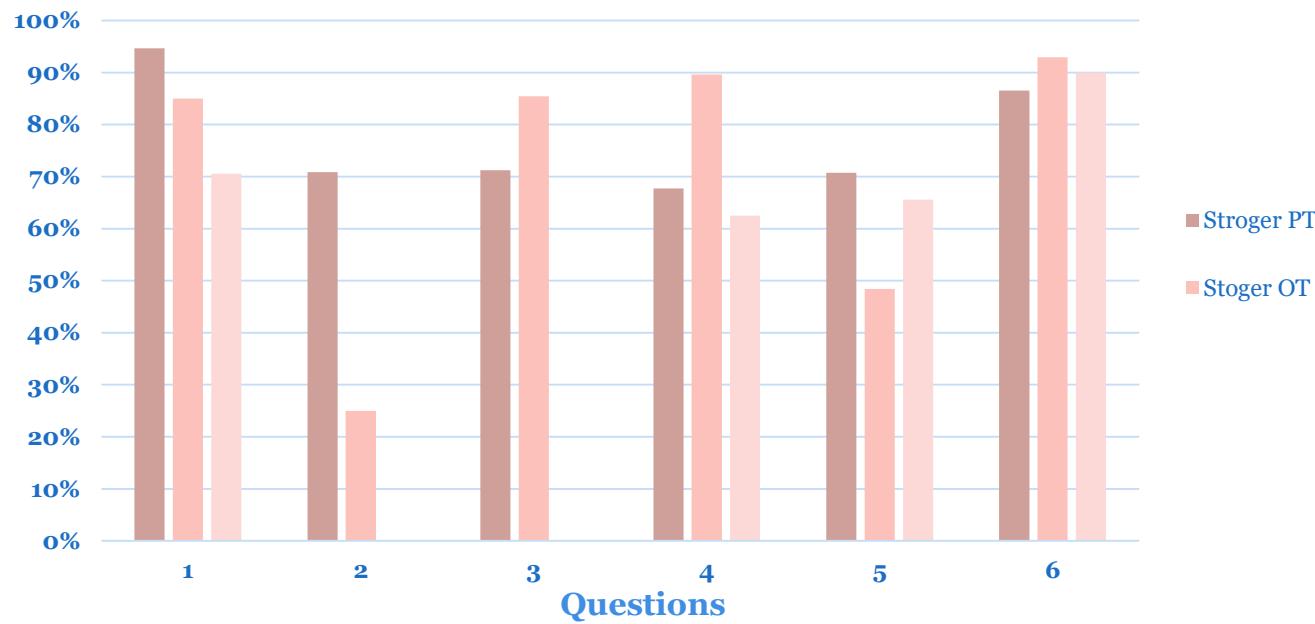
2018 Survey Results



Purpose /Goal	Items Measured	Analysis	Action
<ul style="list-style-type: none"><li>Ensure that patients are satisfied with encounters with OP OT/PT/LSH staff.</li><li>Average patient rating 4 or greater on 6 out of 8 items measured</li></ul>	<p>Q1: The front desk is helpful</p> <p>Q2: Therapist explains the treatment received</p> <p>Q3: Therapist treats me with respect</p> <p>Q4: Therapist listens to my concerns</p> <p>Q5: Therapist answers my questions</p> <p>Q6: Therapist explains my home program</p> <p>Q7: I would return to this clinic for future therapy services</p> <p>Q8: I found the group class helpful (PT service only)</p>	<ul style="list-style-type: none"><li>Department is at compliance</li><li>Limited data for LSH due to staffing shortages and reduced outpatient visits</li></ul>	<ul style="list-style-type: none"><li>Continue to emphasize the patient experience with staff.</li><li>Implement measures to improve survey response rate</li></ul>

# G-Code/Billing Compliance – OT/PT/LSH

## G-Code/Billing Compliance 2018

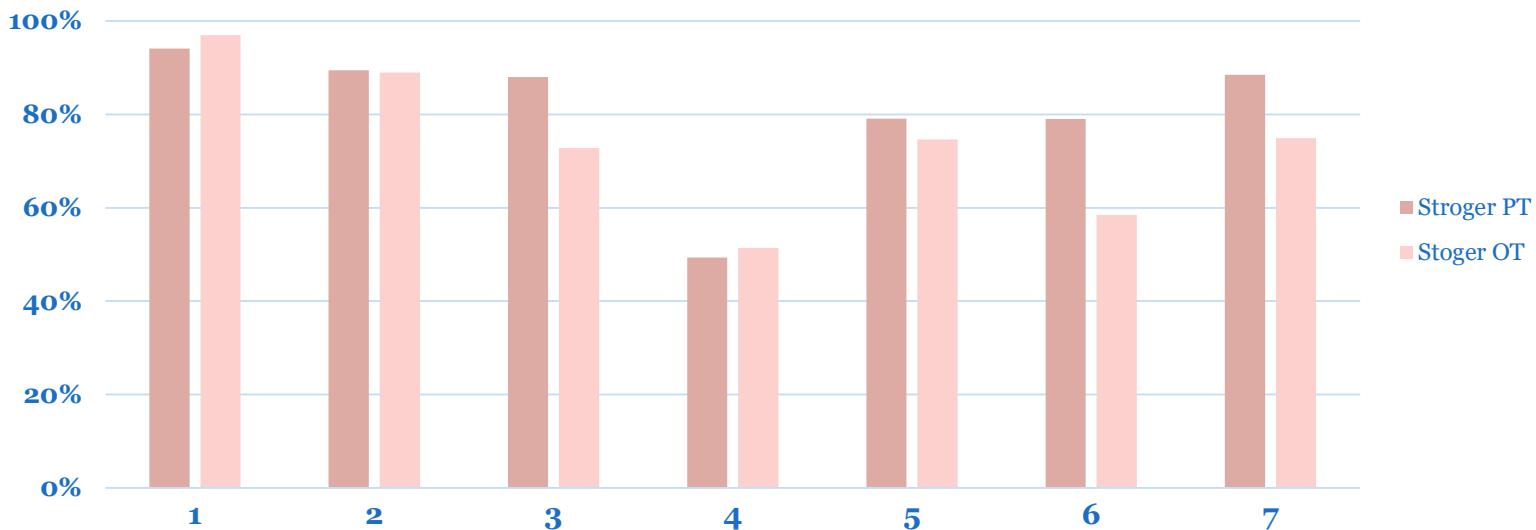


Purpose /Goal	Items Measured	Analysis	Action
<ul style="list-style-type: none"><li>Ensure that IP and OP OT/PT/LSH staff document appropriately to meet regulatory and reimbursement.</li><li>90% or greater on all items measured</li></ul>	<ol style="list-style-type: none"><li>1. G-Code included on evaluation</li><li>2. G-Code included on 10<sup>th</sup> visit, when applicable (N/A for LSH ever)</li><li>3. Code included on re-evaluation</li><li>4. G-Code included on discharge</li><li>5. G-Code improvement noted with Rx</li><li>6. Power Bill with Correct G-Codes</li></ol>	<ul style="list-style-type: none"><li>Department has not consistently met benchmark</li><li>Certain services have limited follow up visits so item doesn't apply.</li><li>Few patients have 10 visits. Therefore, a miss has a disproportional effect</li></ul>	<ul style="list-style-type: none"><li>Implemented training for newly assigned staff</li></ul>



# Pain Management – OT/PT/LSH

Pain Management 2018



Purpose /Goal	Items Measured	Analysis	Action
<ul style="list-style-type: none"><li>Ensure that IP and OP OT/PT staff document monitor and manage pain.</li><li>90% or greater on all items measured</li></ul>	<ol style="list-style-type: none"><li>1. Pain score on initial eval</li><li>2. Pain Score on Follow-ups</li><li>3. Location factors noted</li><li>4. Duration factors noted</li><li>5. Influencing factors noted</li><li>6. Home exercise program developed</li><li>7. Pain levels decreased or were the same at discharge</li></ol>	<ul style="list-style-type: none"><li>Department did not meet benchmark</li><li>Some items non-applicable to certain services</li></ul>	<ul style="list-style-type: none"><li>Implemented training for newly assigned staff</li></ul>

# Research & Presentations

(FB) **Bokhari F**, Fu CY, Bajani F. (2018) The Lethal Effect of Obesity on Trauma Laparotomy. Annual Meeting of Western Surgical Association, San Jose del Cabo, Mexico. Nov 3-6 2018

(FB) **Bokhari F**, Bajani F, Fu CY. (2018) Risk Factors of Complications and Mortality in Truncal Burn Patients: Timing to Skin Grafting for Truncal Burn Patients. Annual Meeting of Midwest Region Burn Conference, Minneapolis, MN. Oct 10-13, 2018

(FB) **Bokhari F**, Fu CY, Bajani F. (2018) To Achieve Level-I Status or not? That is the question. A comparative analysis of Level-I center performance in the US. Scientific Assembly of American College of Emergency Physicians (ACEP), San Diego, CA. Oct 1-4, 2018

(FB) **Bokhari F**. Fu CY. (2018) Right Hospital, Right Patients: Penetrating Trauma Patients Centralized to High Volume Penetrating Trauma Centers Have Lower Mortality. Poster presentation at the Annual Meeting of American Public Health Association(APHA), San Diego, CA. Nov 10-14, 2018

(FB) **Bokhari F**. Fu CY. (2018) Obesity as a New Trauma Triage Criterion: Reduced Complication Rates at LEVEL-I Trauma Centers. Poster presentation at the Annual Meeting of American Public Health Association (APHA), San Diego, CA. Nov 10-14, 2018

(FB) **Bokhari F**. Fu CY. Bajani, F. (2018) Morbid Obesity is Protective in Blunt Abdominal Trauma. Clinical Congress of American College of Surgeons (ACS), Boston, MA. MA Oct 21-25, 2018

(FB) **Bokhari F**. Fu CY. (2018) Geriatric Abdominal Trauma Patients: A Nationwide Analysis of Complicated Cases. 31<sup>st</sup> Panamerican Congress of Trauma, Cartagena, Colombia. Aug 14-17, 2018

(FB) **Bokhari F**. Bajani, F. Fu CY. (2018) The Role of Respiratory Comorbidities in the Management of Facial Burn Patients. Midwest Region Burn Conference, Minneapolis, MI. Oct10-13, 2018

# Research & Presentations

(T) Kramer KZ, Poulakidas SJ, **Bokhari F.** (2018) Use of Etherified, Regenerated Cellulose Hemostatic Agent on the Donor Site of a Pediatric Burn Patient Requiring Split-Thickness Skin Grafting. Midwest Region Burn Conference, Minneapolis, MN. Oct 10-13, 2018

(T) Xu T, Kramer KZ, Koeck E, Poulakidas SJ, **Bokhari F.** (2018) Minimizing Intraoperative Hemorrhage in Wound Debridement using a Topical Collagen-Based Hemostatic Agent. Midwest Region Burn Conference, Minneapolis, MN. Oct 10-13, 2018

(T) Xu T, Kramer KZ, Koeck E, Poulakidas SJ, **Bokhari F.** (2018) Topical Collagen Matrix Aids in the Healing of Burn Wounds. Poster presentation at Midwest Region Burn Conference, Minneapolis, MN. Oct 10-13, 2018

(T) Kramer KZ, Kingsley S, Boron JG, **Bokhari F.** (2018) An Assessment of the 2012 Trauma Triage Recommendations. Poster presentation at the American College of Surgeons, Boston, MA. Oct 21-25, 2018

(T) Kramer K, Fu CY, Bajani F, Boron J, Kaminsky M, Schlanser V, Starr F, Poulakidas S, Messer T, Koeck E, Dennis A, Hollister H, Luftman K, **Bokhari, F.** (2018) Management of Blunt Hollow Viscus Injury: An Urgent but not Emergent Surgical Disease. Trauma Association of Canada Toronto, Canada. Feb 22-23, 2018

(T) Koeck E, Schlanser V, Bajani F, Mis J, Fu CY, Kramer K, Luftman K, Hollister H, Poulakidas S, Boron J, Messer T, Kaminsky M, Dennis A, Starr F, **Bokhari F.** (2018) Base Deficit Does Not Predict Mortality in Penetrating Trauma Patients Who Receive Massive Transfusion Protocol. Trauma Association of Canada, Toronto, Canada. Feb 22-23 2018

(T) Schlanser V, Koeck E, Fu CY, Bajani F, Boron J, Dennis A, Kaminsky M, Kramer K, Poulakidas S, Starr F, **Bokhari F.** (2018) **Base Deficit in Penetrating Trauma Does Not Always Predict Blood Products Transfused in MTP Protocols.** Poster presentation at the Trauma Association of Canada (TAC), Toronto, Canada. Feb 22-23 2018

# Initiatives 2019

- American College of Surgeons certification
- QA benchmarking with national bodies-trauma/burns/physical medicine rehabilitation
- Expansion of service lines
- Prominent national organizational presence
- Collaborative growth with CCH depts - surgery, anesthesia, radiology, medicine, pediatrics, pathology etc.

Thank you.



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**HEALTH**